

AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A pseudo-isothermal radial chemical reactor for catalytic reactions, comprising:

a substantially cylindrical shell closed at the opposite ends by respective base plates;

a radial reaction zone comprising a respective catalytic bed and a plurality of heat exchangers placed in said respective catalytic bed; and

at least one second further radial reaction zone comprising a respective catalytic bed and a plurality of heat exchangers placed in said respective catalytic bed of said second radial

reaction zone, said first and said second radial reaction zones being in fluid communication with each other.

2. (Previously presented) Chemical reactor according to claim 1, wherein said first and said second reaction zone are associated in series.

3. (Previously presented) Chemical reactor according to claim 2, wherein the plurality of heat exchangers of at least one of said reaction zones is in fluid communication with the outside.

4. (Previously presented) Chemical reactor according to claim 3, wherein the pluralities of heat exchangers of both of said reaction zones are in fluid communication with each other.

5. (Previously presented) Chemical reactor according to claim 4, wherein at least one exchanger of said pluralities of heat exchangers is plate-shaped, rectangular and boxed.

6. (Previously presented) Chemical reactor according to claim 5, wherein said plurality of exchangers is arranged radially, coaxially with respect to the axis of the reactor.

7. (Currently amended) A method for optimizing pseudo-isothermal catalytic reactions, comprising the steps of:

feeding reactants to a radial reaction zone comprising a catalytic bed and a plurality of heat exchangers placed in said catalytic bed;

collecting reactants and products coming from the radial reaction zone;

conveying said reactants and products to a second radial reaction zone comprising a respective catalytic bed and a respective plurality of heat exchangers placed in said catalytic bed; and

feeding said reactants and products to said second radial reaction zone and completing the reaction in said catalytic bed.